

We claim:

1. A parenterally-administrable microparticle for providing sustained-release of a therapeutic agent in the body, comprising:

a core comprising a therapeutically effective amount of a therapeutic agent,

5 a first film comprising a first biodegradable polymer encapsulating said core, and

a second film applied to said first film and encapsulating said first film and said core, said second film comprising a second biodegradable polymer soluble in an appropriate solvent for said second polymer,

10 wherein said first film is insoluble in and impervious to said solvent for said second biodegradable polymer.

2. The microparticle of claim 1 wherein said core comprises a third biodegradable polymer having said therapeutic agent dispersed there through.

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3. The microparticle of claim 2 wherein said third biodegradable polymer and said second polymer are soluble in an organic solvent.

4. The microparticle of claim 3 wherein said first biodegradable polymer is soluble in an inorganic solvent.

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5. The microparticle of claim 4 wherein said third biodegradable polymer and said second polymer are the same.

6. The microparticle of claim 4 wherein said third biodegradable polymer and said second polymer are different.

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7. The microparticle of claim 2 wherein said second and third biodegradable polymers comprise a natural or synthetic aliphatic polymer selected from the group consisting polyesters, poly(anhydrides and poly(orthoester)s.

5 8. The microparticle of claim 7 wherein said first biodegradable polymer comprises a natural or synthetic aliphatic polymer selected from the group consisting of starch, simple sugars, polyvinyl alcohol, gelatine, modified cellulose, and glycols..

10 9. The microparticle of claim 2 wherein said second and third biodegradable polymers comprise an alkyd polyester wax and said first biodegradable polymer comprises hydroxypropyl-methyl cellulose.

15 10. The microparticle of claim 9 wherein said second and third biodegradable polymers comprise poly(monostearoyl glycerol-co-succinate and said first biodegradable polymer comprises hydroxypropyl-methyl cellulose.

20 11. The microparticle of claim 1 comprises from about .1to about 50 percent by weight of said therapeutic agent.

12. The microparticle of claim 11 wherein said therapeutic agent is selected from the group consisting of proteins, peptides, growth factors, drugs and biologically active agents.

25 13. The microparticle of claim 2 comprising from about 0.1 to about 50 % of said first film by weight of said core.

14. The microparticle of claim 2 comprising from about 0.5 to about 200 % of said second film by weight of said core.

15. Compositions for parenteral administration and sustained-release of therapeutic agents' comprising:

a microparticle, said microparticle comprising ,
a core comprising a therapeutically effective amount of a therapeutic agent,

a first film comprising a first biodegradable polymer encapsulating said core, and

a second film applied to said first film and encapsulating said first film and said core, said second film comprising a second biodegradable polymer soluble in an appropriate solvent for said second polymer, wherein said first film is insoluble in and impervious to said solvent for said second biodegradable polymer, and;

a biocompatible suitable carrier for said microparticle.

16. The composition 15 said core comprises a third biodegradable polymer having said therapeutic agent dispersed there through.

17. The composition of claim 16 wherein said third biodegradable polymer and said second polymer are soluble in an organic solvent.

18. The composition of claim 17 wherein said first biodegradable polymer is soluble in an inorganic solvent.

19. The composition of claim 18 wherein said third biodegradable polymer and said second polymer are the same.

20. The composition of claim 18 wherein said third biodegradable polymer and said second polymer are different.

5 21. The composition of claim 16 wherein said second and third biodegradable polymers comprise a natural or synthetic aliphatic polymer selected from the group consisting of polyesters, poly(anhydrides and poly(orthoester)s.

10 22. The composition of claim 21 wherein said first biodegradable polymer comprises a natural or synthetic aliphatic polymer selected from the group consisting of starch, simple sugars, polyvinyl alcohol, gelatine, modified cellulose, and glycols.

15 23. The composition of claim 16 wherein said second and third biodegradable polymers comprise an alkyd polyester wax and said first biodegradable polymer comprises hydroxypropyl-methyl cellulose.

20 24. The composition of claim 23 wherein said second and third biodegradable polymers comprise poly(monostearoyl glycerol-co-succinate and said first biodegradable polymer comprises hydroxypropyl-methyl cellulose.

25. The composition of claim 15 comprising from about 0.1 to about 50 percent by weight of said therapeutic agent.

25 26. The composition of claim 25 wherein said therapeutic agent is selected from the group consisting of proteins, peptides, growth factors, drugs and biologically active agents.

28. The microparticle of claim 16 comprising from about 0.1 to about 50 % of said first film by weight of said core.

29. The microparticle of claim 16 comprising from about 0.5 to about 200 % of said second film by weight of said core.

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